

Please amend claims 18, 23-26, 28 and 30-36 as indicated  
below:

18. (Twice Amended) An elongated intravascular assembly for performing a procedure at a location within a human patient's coronary artery including a guidewire and a catheter which is adapted for rapid exchange over the guidewire without the utilization of an exchange wire or an extension wire, the assembly comprising:

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- a) an elongated catheter with a catheter shaft which has proximal and distal ends, which is configured for percutaneous introduction into and advancement within the patient's vasculature, which is sufficiently long to be advanced through the patient's femoral artery and into the patient's coronary artery and which has,
  - a distal shaft section which is configured for advancement within [a] the patient's coronary artery,
  - a distal guidewire opening in the distal end of the catheter shaft,
  - a proximal guidewire opening spaced a relatively short distance proximally from the distal guidewire opening and a relatively long distance from the proximal end of the catheter shaft,

an inner lumen which extends between the distal guidewire opening and the proximal guidewire opening and which is configured to slidably receive a guidewire therein, and a proximal shaft section much longer than the distal shaft section;

b) means on the distal shaft section to perform an intravascular procedure which is spaced closer to the distal guidewire opening than the proximal guidewire opening; and

c) a guidewire which is longer than the catheter to extend out of the distal end of the catheter into the patient's coronary artery beyond the location therein where the procedure is to be performed and which is slidably disposed within the inner lumen extending between the distal guidewire opening and the proximal guidewire opening.

23. (Twice Amended) An elongated balloon dilatation catheter assembly for performing an angioplasty procedure at a location within a human patient's coronary artery including a guidewire and balloon dilatation catheter which has means for the rapid exchange [of a balloon dilatation catheter] over [a] the guidewire without the utilization of an exchange wire or an extension wire, comprising:

a) [an] the elongated balloon dilatation catheter [which is] being configured for percutaneous introduction into [a] the patient's femoral artery and advancement into the patient's coronary artery and [which has] having

[a] an elongated catheter shaft with proximal and distal ends, an inflation lumen and a guidewire receiving lumen [extending therein],

a distal guidewire opening in the distal end of the catheter shaft in fluid communication with the guidewire lumen,

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a proximal guidewire opening spaced a short distance proximally from the distal guidewire opening and a substantial distance from the proximal end of the catheter shaft and in fluid communication with the guidewire lumen;

an inflatable dilatation balloon on a distal shaft section having proximal and distal ends, with the distal end of the balloon being spaced closer to the distal guidewire opening than the proximal end of the balloon is spaced from the proximal guidewire opening, and having an interior which is in fluid communication with the inflation lumen; and

b) [a] the guidewire [which is] being sufficiently long to be advanced through the patient's femoral artery and into the patient's

coronary artery beyond the location therein where the angioplasty procedure is to be performed and [which is] being slidably disposed within the guidewire lumen of the balloon dilatation catheter [and which has a portion extending out the distal port and a portion extending out of the proximal port].

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3 26/ (Twice Amended) An elongated balloon dilatation catheter for performing an angioplasty procedure within a human patient's coronary artery which has means for the rapid exchange of the catheter over a guidewire without the utilization of an exchange wire or an extension wire, comprising:

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- a) an elongated catheter shaft having proximal and distal ends and being configured for percutaneous introduction into the patient's femoral artery;
- b) a distal guidewire opening in the distal end of the catheter shaft;
- c) a proximal guidewire opening in the catheter shaft spaced a short distance of at least 10 cm proximally from the distal guidewire opening and a substantial distance from the proximal end of the catheter shaft;

d) a flexible distal shaft section configured to be advanceable within the patient's coronary arteries having a guidewire-receiving [inner] lumen extending proximally from the distal guidewire opening to the proximal guidewire opening and having an inflation lumen coextensive at least in part with the guidewire-receiving [inner] lumen,

[d]e) an inflatable dilatation balloon on the distal shaft section having proximal and distal ends, [and] having an interior which is in fluid communication with the inflation lumen and being spaced closer to the distal end of the catheter shaft than the proximal guidewire opening; and

[e]f) a proximal shaft section much longer than the distal shaft section which is an elongated tubular member with [a single] an inner lumen extending therein in fluid communication with the inflation lumen in the distal section and which is suitable to advance the distal shaft section within a patient's coronary artery over a guidewire slidably disposed within the guidewire receiving [inner] lumen.

28. (Twice Amended) An elongated balloon dilatation catheter for performing an angioplasty procedure within a human patient's coronary artery which has means for the rapid exchange of the catheter over a

guidewire without the utilization of an exchange wire or an extension wire, comprising:

- a) an elongated catheter shaft having proximal and distal ends and being configured for percutaneous introduction into the patient's femoral artery;
- b) a distal guidewire opening in the distal end of the catheter shaft;
- c) a proximal guidewire opening in the catheter shaft spaced a short distance proximally from the distal guidewire opening and a substantial distance from the proximal end of the catheter shaft;
- d) a flexible distal shaft section configured to be advanceable within [a] the patient's coronary arteries having a first inner lumen which extends proximally from the distal guidewire opening to the proximal guidewire opening and which is configured to slidably receive a guidewire therein, a second inner lumen which is coextensive at least in part with the guidewire-receiving first inner lumen and which is configured to direct inflation fluid therethrough, a third inner lumen which is coextensive with the first inner lumen and which is configured to be in fluid

communication with a second opening in the distal end of the catheter shaft, and

an inflatable dilatation balloon on the distal shaft section having an interior which is in fluid communication with the second inner lumen and being spaced closer to the distal end of the shaft than the proximal guidewire port; and

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e) a proximal shaft section much longer than the distal shaft section which is a single elongated tubular member with two inner lumens extending therein, one of the two inner lumens being in fluid communication with the second inner lumen in the distal shaft section and the other inner lumen being in fluid communication with the third inner lumen in the distal shaft section.

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30. (Amended) An intravascular assembly which has means for performing a procedure within a region of a human patient's body and which is configured for percutaneous introduction into the patient's vasculature, comprising:

a) an intravascular catheter having  
an elongated shaft which is [long enough]  
configured for advancement through the patient's  
vasculature to the region within the patient's body where

the procedure is to be performed and which has proximal and distal ends,

a [relatively short] distal shaft section,

a proximal shaft section much longer than the distal shaft section,

[means on the distal shaft section to perform the procedure,]

a distal guidewire opening in the distal end of the shaft,

a proximal guidewire opening spaced a relatively short distance of at least 10 cm proximally from the

[means to perform the procedure] distal end of the shaft  
and a relatively long distance from the proximal end of the shaft, [and]

means on the distal shaft section to perform the procedure which is configured for percutaneous introduction and advancement into the patient's vasculature and which is spaced closer to the distal end of the shaft than the proximal guidewire opening,

a guidewire passageway which extends between the distal guidewire [port] opening and the proximal guidewire [port] opening; and

b) a guidewire which has an elongated core member and a helical coil on a distal portion of the core member, which is longer than the catheter and which is slidably disposed within the guidewire passageway to facilitate delivery of the catheter thereover to the region within the patient's body where the procedure is to be performed.

31. (Amended) The intravascular assembly of claim [31] 30 wherein the means to perform the procedure is in communication with an exterior portion of the distal shaft section.

32. (Amended) In an intravascular assembly for performing a procedure within a region of a human patient's body which is configured for percutaneous introduction into the patient's vasculature and for intravascular delivery to a region within the patient's body where the procedure is to be performed

a) an elongated catheter which has

an elongated shaft with proximal and distal ends, a [relatively short] distal shaft section and a proximal shaft section much longer than the distal shaft section,

[means to perform the procedure on the distal shaft section,]

a distal guidewire port in the distal end of the shaft,

a proximal guidewire port spaced a relatively short distance proximally from the [means to perform the procedure] distal end of the shaft and a relatively long distance from the proximal end of the shaft, and

means to perform the procedure on the distal shaft section which is configured for percutaneous introduction and advancement within the patient's vasculature and which is spaced closer to the distal end of the shaft than to the proximal guidewire port,

a guidewire passageway which extends between the distal guidewire port and the proximal guidewire port; and

b) an elongated guidewire which is longer than the catheter, which has an elongated core member and a flexible

coil on a distal portion of the core member and which is slidably disposed within the guidewire passageway to facilitate advancement of the catheter over the guidewire through the patient's vasculature to said region while maintaining the position of the guidewire within the patient's vasculature.

33. (Amended) In a balloon dilatation catheter assembly for performing an angioplasty procedure within a region of a human patient's coronary artery which is configured for percutaneous introduction into the patient's vasculature and for intravascular delivery to [a] the coronary artery where the procedure is to be performed

- a) an elongated catheter which has
  - an elongated shaft with proximal and distal ends, a [relatively short] distal shaft section, a proximal shaft section much longer than the distal shaft section and an inflation lumen extending therein,
  - [a dilatation balloon on the distal shaft section having an interior in fluid communication with the inflation lumen,]
  - a distal guidewire port in the distal end of the shaft,

a proximal guidewire port spaced a relatively short distance proximally from the [dilatation balloon] distal end of the shaft and a relatively long distance from the proximal end of the shaft, [and]

a dilatation balloon on the distal shaft section which has an interior in fluid communication with the inflation lumen and which is spaced closer to the distal end of the shaft than to the proximal guidewire port,

a guidewire passageway which extends between the distal guidewire port and the proximal guidewire port; and

b) an elongated guidewire which is at least as long as the catheter, which has an elongated core member and a helical coil on a distal portion of the core member and which is disposed within the guidewire passageway to facilitate advancement of the catheter through the patient's vasculature over the guidewire to the patient's coronary artery while maintaining the position of the guidewire within the patient's vasculature.

34. (Amended) The balloon dilatation catheter assembly of claim 33 wherein the guidewire passageway is at least 10 cm in length.

35. (Amended) An intravascular catheter which has means for performing a procedure within a region of a human patient's body and which is configured for percutaneous introduction into the patient's vasculature, comprising:

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- a) an elongated shaft which is configured for percutaneous introduction into the patient's vasculature, which is long enough for advancement through the patient's vasculature to the region of the patient's body where the procedure is to be performed and which has proximal and distal ends;
- b) a [relatively short] distal shaft section;
- c) a proximal shaft section much longer than the distal shaft section;
- d) [means on the distal shaft section to perform the procedure;
- e)] a distal guidewire [port] opening in the distal end of the shaft;
- [f]e) a proximal guidewire [port] opening spaced a relatively short distance of at least 10 cm proximally from the [means to perform the procedure] distal end of the shaft and a relatively long distance from the proximal end of the shaft; [and]

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f) means on the distal shaft section to perform the procedure which is configured for percutaneous introduction and advancement within the patient's vasculature and which is spaced closer to the distal end of the shaft than the proximal guidewire opening; and

g) a guidewire passageway [at least 10 cm in length] which extends between the distal guidewire port and the proximal guidewire port and configured to slidably receive a guidewire therein.

36. (Amended) A balloon dilatation catheter for performing an angioplasty procedure within a human patient's coronary artery which is configured for percutaneous introduction into the patient's vasculature and for intravascular delivery to the coronary artery where the angioplasty procedure is to be performed, comprising:

a) an elongated shaft with proximal and distal ends, a [relatively short] distal shaft section, a proximal shaft section much longer than the distal shaft section and an inflation lumen extending therein;

b) [a dilatation balloon on the distal shaft section having an interior in fluid communication with the inflation lumen;